

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

ANDREAS BACHER ET AL.

Group Art Unit: 1796

Examiner: Vickey Nerangis

Serial No.: 10/618,936

Filed: July 14, 2003

For: SILANE-CONTAINING POLYVINYL ALCOHOL FOR COATING SLIPS

Attorney Docket No.: WAS 0595 PUSA

**RESPONSE TO NOTICE OF NON-COMPLIANT  
APPEAL BRIEF UNDER 37 CFR § 41.37**

Mail Stop Appeal Brief- Patents  
Commissioner for Patents  
U.S. Patent & Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450


Sir:

In response to the Notification of Non-Compliant Appeal Brief dated April 16, 2009, kindly substitute the attached Section II, "Related Appeals And Interferences" (page 2) with the attached revised page (2), and the attached Section X. "Related Proceedings Appendix" (page 7) with the attached revised page (7).

The Commissioner is hereby authorized to charge any additional fees to our Deposit Account No. 02-3978.

Respectfully submitted,

ANDREAS BACHER et al.

By:   
William G. Conger  
Registration No. 31,209  
Attorney/Agent for Applicant

Date: April 22, 2009

BROOKS KUSHMAN P.C.  
1000 Town Center, 22nd Floor  
Southfield, MI 48075-1238

Phone: 248-358-4400; Fax: 248-358-3351

Attachments: page 2, page 7, Decision of Board February 27, 2007

## **II. RELATED APPEALS AND INTERFERENCES**

There are no appeals, interferences or judicial proceedings known to the Appellant, the Appellant's legal representative, or the Assignee which are pending and may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal. However, the pending application is an RCE of the original application, the final rejection of the claims of which were appealed. The scope of the pending claims as well as the evidence present in the RCE are not the same as in the Appeal. The decision of the Board affirming the rejection issued on February 27, 2007, a copy of which is contained in Appendix X.

## **III. STATUS OF CLAIMS**

Claims 1, 4 - 7, 10 - 17, and 21 - 23 are pending in this application. Claims 1, 4 - 7, 10 - 15, 17 and 21 - 23 have been rejected and are the subject of this appeal<sup>1</sup>.

## **IV. STATUS OF AMENDMENTS**

No amendment after final rejection has been filed.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The claimed invention is directed to silane-containing polyvinyl alcohol polymers consisting essentially of a completely or partially hydrolyzed vinyl ester copolymer with a degree of hydrolysis of 76 - 100 mol% (page 2, lines 22 - 25) obtained by free radical polymerization of vinyl acetate and from 1 to 30 mol%, based on polymer weight, of 1-methylvinyl acetate, and from 0.01 to 1 mol% (page 7, lines 1 - 3) of ethylenically unsaturated silane-containing monomers (page 2, line 25 to page 3, line 5; page 3, line 26) selected from the group enumerated in claim 1 (claim 5 as filed; page 5, lines 1 - 18).

Claims 5 and 22 further requires a silane monomer to be one of vinyltrimethoxysilane, vinylmethyldimethoxysilane, vinyltriethoxysilane, and vinylmethyldiethoxysilane.

---

<sup>1</sup>Claim 16 is not appealed only because it is a duplicate of claim 1, since it fails to further limit that claim.

**X. RELATED PROCEEDINGS APPENDIX**

Board Decision of February 27, 2007

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* ANDREAS BACHER, KARL-ERNST FICKERT,  
THEO MAYER and KURT STARK

---

Appeal 2007-0618  
Application 10/618,936  
Technology Center 1700

---

was 0595-AUS

Decided: February 27, 2007

---

Dec. 4-27-07

Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and THOMAS A. WALTZ, *Administrative Patent Judges*.

WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal from the Primary Examiner's final rejection of claims 1 through 15, which are the only claims pending in this application. We have jurisdiction pursuant to 35 U.S.C. § 134.

According to Appellants, the invention is directed to silane-containing polyvinyl alcohols which are hydrolyzed or partially hydrolyzed vinyl ester copolymers having a degree of hydrolysis of 75-100 mol%, where these

products are obtained by a free radical polymerization of at least three specified monomers (Br. 2). Further details of the invention can be gleaned from representative independent claim 1, which is reproduced below:

1. A silane-containing polyvinyl alcohol comprising a completely hydrolyzed or partially hydrolyzed vinyl ester copolymer having a degree of hydrolysis of from 75 to 100 mol%, obtained by free radical polymerization of

a) one or more vinyl esters of straight-chain or branched alkane carboxylic acids having 1 to 18 carbon atoms, of which an amount of from 1 to 30 mol%, based on total polymer, are one or more 1-alkylvinyl esters of C<sub>1-6</sub> carboxylic acids, where the 1-alkyl groups are C<sub>1-6</sub> alkyl radicals;

b) from 0.01 to 10 mol% of one or more silane-containing, ethylenically unsaturated monomers, and

c) optionally further comonomers copolymerizable therewith, and hydrolysis of the polymers obtained thereby.

The Examiner has relied upon the following references as evidence of obviousness:

Maruyama	US 4,617,239	Oct. 14, 1986
Schilling	US 4,879,336	Nov. 07, 1989

#### ISSUES ON APPEAL

Claims 1-15 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Schilling in view of Maruyama (Answer 3).<sup>1</sup>

---

<sup>1</sup> We refer to and cite from the "Supplemental Examiner's Answer" dated Jul. 10, 2006.

Appellants contend that Schilling has no discussion of storage stability (Br. 3-4; Reply Br. 2), and the “other monomers” taught by Schilling are very limited (Reply Br. 4).

Appellants further contend that there is no evidence of a motivation to combine the references as proposed by the Examiner, as the problems addressed by the references are very distinct from each other (Br. 6-7; Reply Br. 4).

The Examiner contends that Schilling is “open to the use of another monomer” and, given the benefits of using an ethylenically unsaturated silane-containing monomer in a polyvinyl alcohol binder for paper applications as taught by Maruyama, it would have been obvious to one of ordinary skill in the art to use a silane-containing monomer in the polyvinyl alcohol of Schilling (Answer 4).

Therefore the issue on appeal is: would one of ordinary skill in this art have found it obvious to incorporate the silane-containing monomer taught by Maruyama into the polyvinyl alcohol cobinder composition disclosed by Schilling?

We determine that the Examiner has established a prima facie case of obviousness in view of the reference evidence. Based on the totality of the record, including due consideration of Appellants’ arguments and evidence, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of § 103(a). Therefore we AFFIRM the sole rejection on appeal essentially for the reasons stated in the Answer as well as those reasons set forth below.

### OPINION

We determine the following factual findings from the record in this appeal:

- (1) claim 1 on appeal requires a completely or partially hydrolyzed vinyl ester copolymer having a 75-100 mol% degree of hydrolysis obtained by free radical polymerization of at least three monomers, including a vinyl ester of C1 to C18 carboxylic acids, a 1-alkylvinyl ester of C1 to C6 carboxylic acids, and a silane-containing, ethylenically unsaturated monomer (see claim 1 on appeal; Reply Br. 4);
- (2) Schilling is directed to an improved cobinder for a coating slip composition, where the cobinder polymer comprises (a) vinyl alcohol units; (b) 1-alkylvinyl alcohol units; (c) optionally vinyl acylate units; (d) optionally allyl alcohol units; and (e) optionally “other polymerizable monomers” (col. 2, ll. 35-48);
- (3) Schilling teaches a two-stage process, using free radical polymerization followed by hydrolysis (col. 3, ll. 22-44);
- (4) Schilling exemplifies the incorporation of only two types of “other polymerizable monomers,” namely vinyl esters of increased hydrophobia such as vinyl fatty acid esters or ethylene (col. 3, l. 57-col. 4, l. 2);
- (5) Schilling teaches that polyvinyl alcohol cobinders have excellent pigment-binding power and support effect for optical brighteners, but an object of the invention is to overcome the water solubility and “pigment-shock” disadvantages (col. 2, ll. 7-31);

- (6) Maruyama discloses a paper coating agent comprising silicon-containing modified polyvinyl alcohol, and this coating agent becomes viscous and gelled upon contact with paper, forming a water-resistant film on the paper surface improving the surface strength and printability (col. 2, ll. 5-19);
- (7) Maruyama teaches the formation of this coating agent by copolymerizing a vinyl ester and silicon-containing olefinic unsaturated monomer, followed by saponification (hydrolysis) (col. 3, ll. 2-15; *see also* col. 7, ll. 9-14); and
- (8) Maruyama teaches that the silicon atom of the paper coating agent, when applied to paper, greatly improves the surface properties of paper (surface strength, printability, and barrier properties) by reacting with the cellulose fibers and pigments, forming a firm uniform film on the surface of the paper (col. 9, ll. 8-26).

“When it is necessary to select elements of various teachings in order to form the claimed invention, we ascertain whether there is any suggestion or motivation in the prior art to make the selection made by the applicant. [Citation omitted].” *In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). “Where claimed subject matter has been rejected as obvious in view of a combination of prior art references, a proper analysis under § 103 requires, *inter alia*, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable



expectation of success. [Citation omitted].” *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

On the record in this appeal, we find that Schilling discloses an improved cobinder for binding pigments to the paper substrate (col. 1, ll. 54-57, and col. 2, ll. 7-10). We further find that Maruyama discloses a similar binding composition to that of Schilling but with the addition of a silicon-containing monomer (e.g., col. 3, ll. 2-7; col. 7, ll. 9-19). We find that Maruyama teaches that the silicon atom in the silicon-containing modified polyvinyl alcohol is reactive with cellulose fibers of paper *and pigments* to form a firm uniform film on the paper surface (col. 9, ll. 8-26; *italics added*). We therefore agree with the Examiner (Answer 4) that one of ordinary skill in this art would have incorporated the silicon-containing monomer of Maruyama into the cobinder composition of Schilling for its expected advantages of binding pigments to produce improved surface properties. We also determine that one of ordinary skill in this art would have had a reasonable expectation of success in so incorporating the silicon-containing monomer. We find a reasonable expectation since the two required monomers of Schilling (e.g., vinyl acetate and 1-alkylvinyl acetate at col. 3, ll. 23-26) are similar in structure to the vinyl ester required monomer disclosed by Maruyama (e.g., vinyl acetate at col. 3, ll. 8-9).

For the foregoing reasons, we determine that the Examiner has established a *prima facie* case of obviousness in view of the reference evidence. Appellants assert that the Examples in the Specification show unexpected results (Br. 3; Reply Br. 4-5). Accordingly, we must reconsider all evidence for and against obviousness. *See In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

We agree with the Examiner that the Examples relied upon by Appellants are not commensurate in scope with the claimed subject matter and fail to present a comparison with the closest prior art (Answer 7-8). Appellants only rely on Example 1 from the Specification (Br. 3; *see* Table 3 on page 13 of the Specification). This Example is limited to specific monomer compositions while the claims on appeal are not so limited, including dependent claims 2 and 3 (Reply Br. 5). *See In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). Comparative showings must compare the claimed subject matter with the closest prior art to be effective. *See In re Burckel*, 592 F.2d 1175, 1179, 201 USPQ 67, 71 (CCPA 1979). The showing in Table 3 of the Specification only refers to a “[c]ommercial silane-containing polyvinyl alcohol” but fails to identify the specific composition of this alcohol (Answer 8).

For the foregoing reasons and those stated in the Answer, we do not find Appellants’ evidence persuasive of non-obviousness. Therefore we affirm the Examiner’s rejection of claims 1-15 under § 103(a) over Schilling in view of Maruyama.

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(2007).

AFFIRMED

tf

Brooks Kushman P.C.  
1000 Town Center  
Twenty-Second Floor  
Southfield, MI 48075